

What is claimed is:

1. A multi-beam scanning device, comprising:

a light source that emits a plurality of light beams;

a polygonal mirror that deflects the light beams emitted by said light source to scan; and

an optical system that converges the deflected light beams on a plurality of objects to be scanned, the plurality of objects being arranged on a side, with respect to said polygonal mirror, in which said light beams scan, from a position closer to said polygonal mirror to a position farther from said polygonal mirror in order,

said optical system including a plurality of optical path turning systems that turn optical paths of the deflected light beams, respectively, optical path lengths of the optical paths of the deflected light beams being the same, and

each of said optical path turning system including a plurality of reflection surfaces, the numbers of the reflections surfaces of all of said optical path turning systems being one of even numbers and odd numbers.

2. The multi-beam scanning device according to claim 1, further comprising an f θ lens including a first lens, a

second lens and a plurality of third lenses, all the deflected light beams passing through said first lens and said second lens, the deflected light beams passed through said first lens and said second lens passing through respective ones of said plurality of third lenses, said plurality of optical path turning systems receiving said plurality of light beams that emerge from said second lens and directing the received light beams to said plurality of third lenses, respectively.

3. The multi-beam scanning device according to claim 2, wherein each of said optical path turning systems having a first reflection surface and a second reflection surface, the light beams emerged from said second lens being incident on the first reflection surfaces of respective optical path turning systems, each optical path of the beams incident on the first reflection surface of each of said optical path turning systems and directed to respective third lenses including a first optical path defined between said second lens and said first reflection surface, a second optical path defined between said first reflection surface and said second reflection surface, and a third optical path defined between said second reflection surface to said objects.

4. The multi-beam scanning device according to claim 3, wherein the third optical path of the optical path of the beam directed to one of said plurality of objects is located closest to said polygonal mirror passing a position between said polygonal mirror and said first lens.

5. The multi-beam scanning device according to claim 4, wherein at least one of said optical path turning systems includes a first mirror and a second mirror, said first reflection surface being a reflection surface of said first mirror, said second reflection surface being a reflection surface of said second mirror.

6. The multi-beam scanning device according to claim 4, wherein at least one of said optical path turning systems includes a prism having two reflection surfaces, said first reflection surface being one of the reflection surfaces of said prism, said second reflection surface being the other one of the reflection surfaces of said prism.

7. The multi-beam scanning device according to claim 4, wherein at least one of said optical path turning systems includes a prism having a reflection surface and a mirror having a reflection surface, said first reflection surface

being one of the reflection surfaces of said prism and said mirror, said second reflection surface being the other one of the reflection surfaces of said prism and said mirror.

8. The multi-beam scanning device according to claim 4, wherein each of said optical paths is configured such that the third optical path intersects with the first optical path.

9. The multi-beam scanning device according to claim 4, wherein each of said optical paths is configured such that the beam proceeding along the second optical path is directed on an opposite side, with respect to the first optical path, of said objects to be scanned.

10. The multi-beam scanning device according to claim 4, wherein said first lens has a positive power mainly in the main scanning direction in which the plurality of light beams scan.

11. The multi-beam scanning device according to claim 4, said second lens having a positive power only in a main scanning direction in which the plurality of light beams scan.

12. The scanning device according to claim 4, wherein each of said third lenses has a positive power mainly in an auxiliary scanning direction, which is perpendicular to a main scanning direction where the light beams.

13. A multi-beam scanning device, comprising:

a light source that emits a plurality of light beams;

a polygonal mirror that deflects the light beams emitted by said light source to scan; and

an optical system that converges the deflected light beams on a plurality of objects to be scanned, the plurality of objects being arranged on a side, with respect to said polygonal mirror, in which said light beams scan, from a position closer to said polygonal mirror to a position farther from said polygonal mirror in order,

said optical system including a plurality of optical path turning systems that turn optical paths of the deflected light beams, respectively, optical path lengths of the optical paths of the deflected light beams being the same, and

each of said optical path turning system including a plurality of reflection surfaces, the numbers of the reflections surfaces of all of said optical path turning

systems being the same.

14. The multi-beam scanning device according to claim 13, further comprising an $f\theta$ lens including a first lens, a second lens and a plurality of third lenses, all the deflected light beams passing through said first lens and said second lens, the deflected light beams passed through said first lens and said second lens passing through respective ones of said plurality of third lenses, said plurality of optical path turning systems receiving said plurality of light beams that emerge from said second lens and directing the received light beams to said plurality of third lenses, respectively.